

FIG. 1

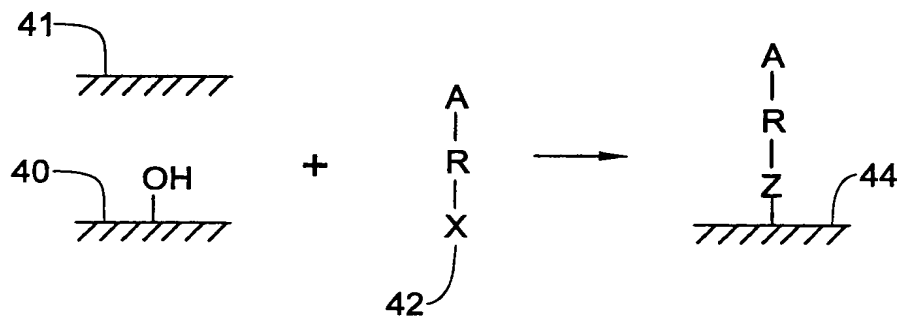


FIG. 2A

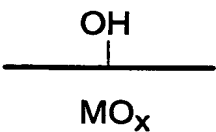
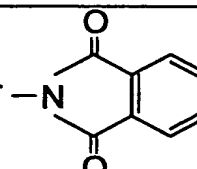
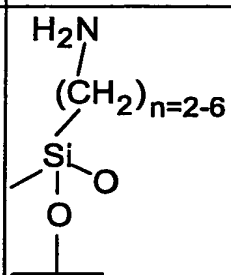
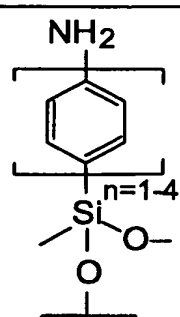
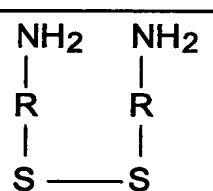
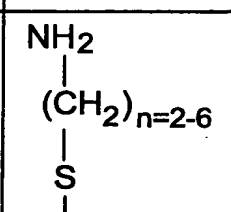
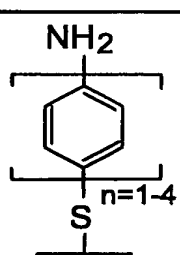
Substrate	Coupling Agent (X=silane or thiol)	Template Layer (Z=siloxane or metal sulfide)
 <p>MO_x M= Si, Ti, In, Fe, ... 40</p>	<p>A = NH₂ or </p> <p>R = alkyl or phenyl</p> <p>SiY₃ Y= halogen or alkoxy 42</p>	<p> 44</p> <p> n=1-4</p>
<p>M or MM'</p> <p>M= Au, Pt, Cu, ... MM'= GaAs, CdSe, ... 41</p>	<p>NH₂ or </p> <p>R = alkyl or phenyl 42</p>	<p> 44</p> <p> n=1-4</p>

FIG. 2B

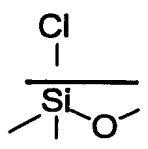
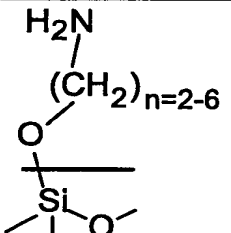
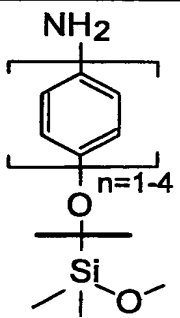
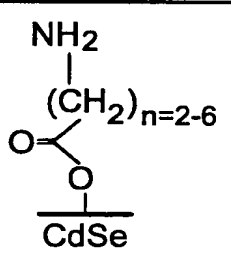
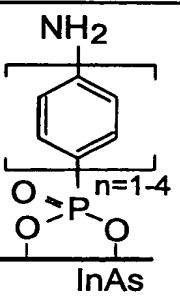
Substrate	Coupling Agent (X= OH,CO ₂ H, PO ₃ H ₂)	Template Layer (Z= alkoxy silane, phosphate or carboxylate)
 <p>40</p>	<p>HO - R - NH₂ R= alkyl or phenyl 42</p>	<p> 44</p> <p> n=1-4</p>
<p>II -IV</p> <p>III-V</p> <p>41</p>	<p>HOOC - R - NH₂ (HO)₂OP - R - NH₂ R= alkyl or phenyl 42</p>	<p> 44</p> <p> n=1-4</p>

FIG. 2B CONT

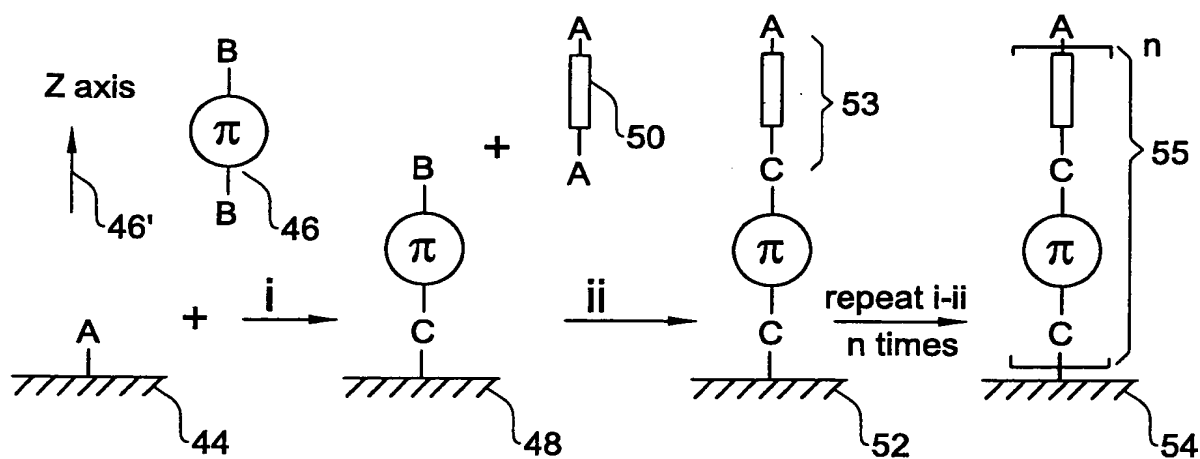


FIG. 3A

A	B	C	INS./SC	COND./SC	
$-\text{NH}_2$					INS/COND
$\text{R}-\text{CH}(\text{NH}_2)-\text{CH}(\text{NH}_2)-\text{R}$			$-(\text{CH}_2)_n-$ $n=1-12$	 $n=1-6$ oligothiophene	
$-\text{NH}_2$	$\text{C}=\text{O}$	$\text{C}=\text{N}-$	 $n=0-5$	 $n=1-6$ oligoaniline	
$-\text{SiCl}_3$	$-\text{OH}$		$\text{B}-\pi-\text{B}$	$\text{A}-\pi-\text{A}$	SC/SC
	$-\text{OH}$		naphtalene perylene terylene anthracene pentacene	porphyrine phthalocyanine	

FIG. 3B

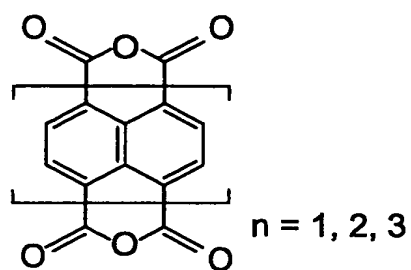


FIG. 4A

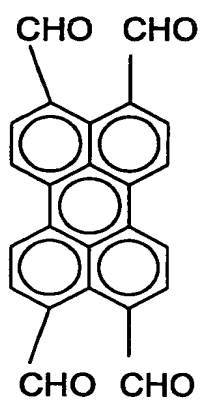


FIG. 4B

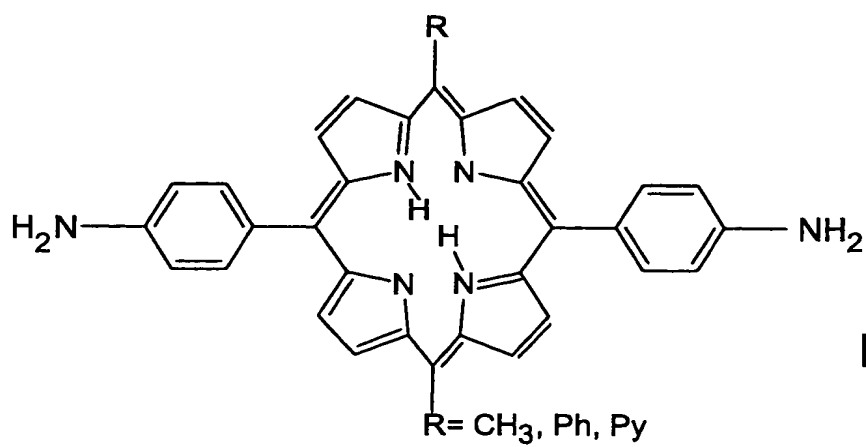


FIG. 4C

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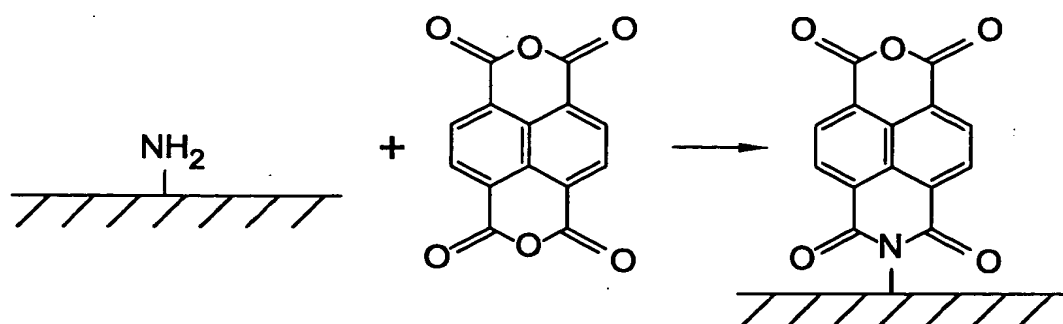


FIG. 5A

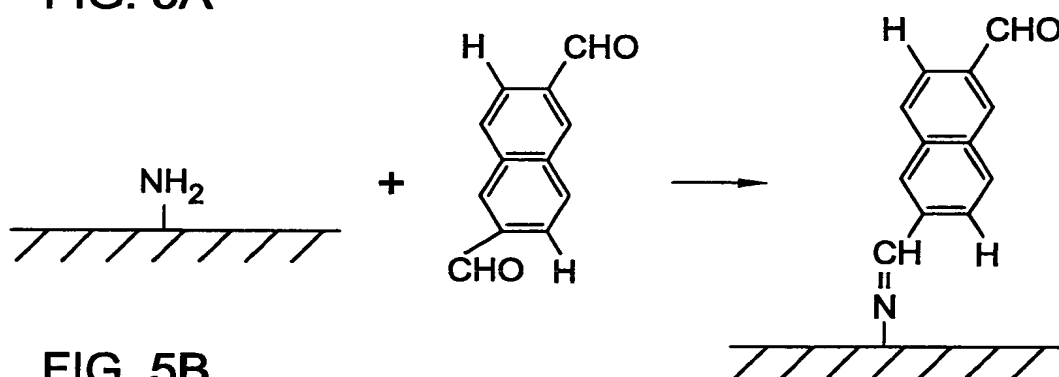


FIG. 5B

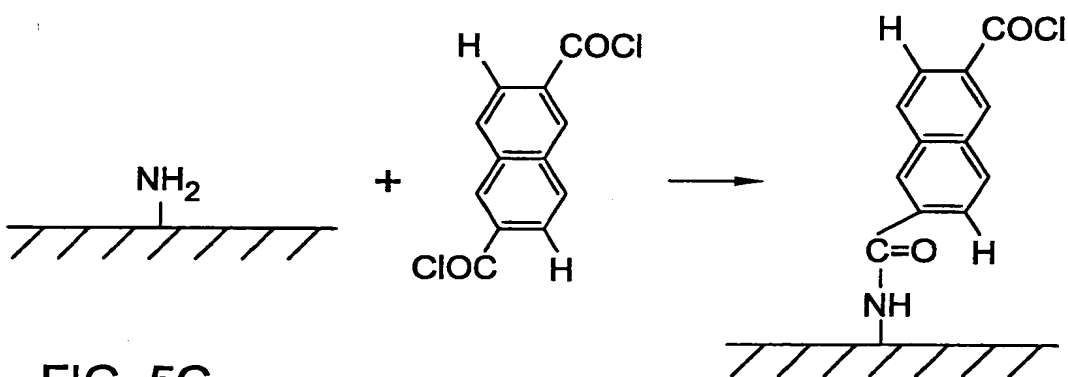


FIG. 5C

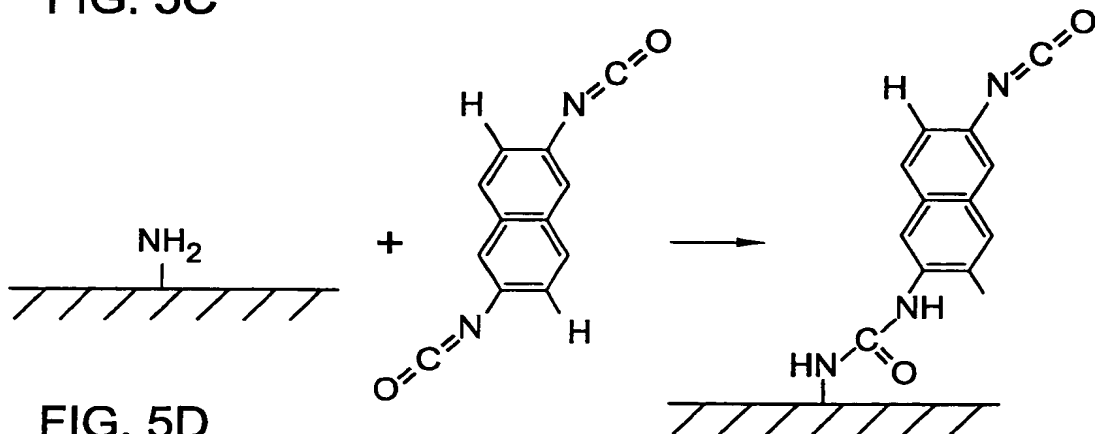


FIG. 5D

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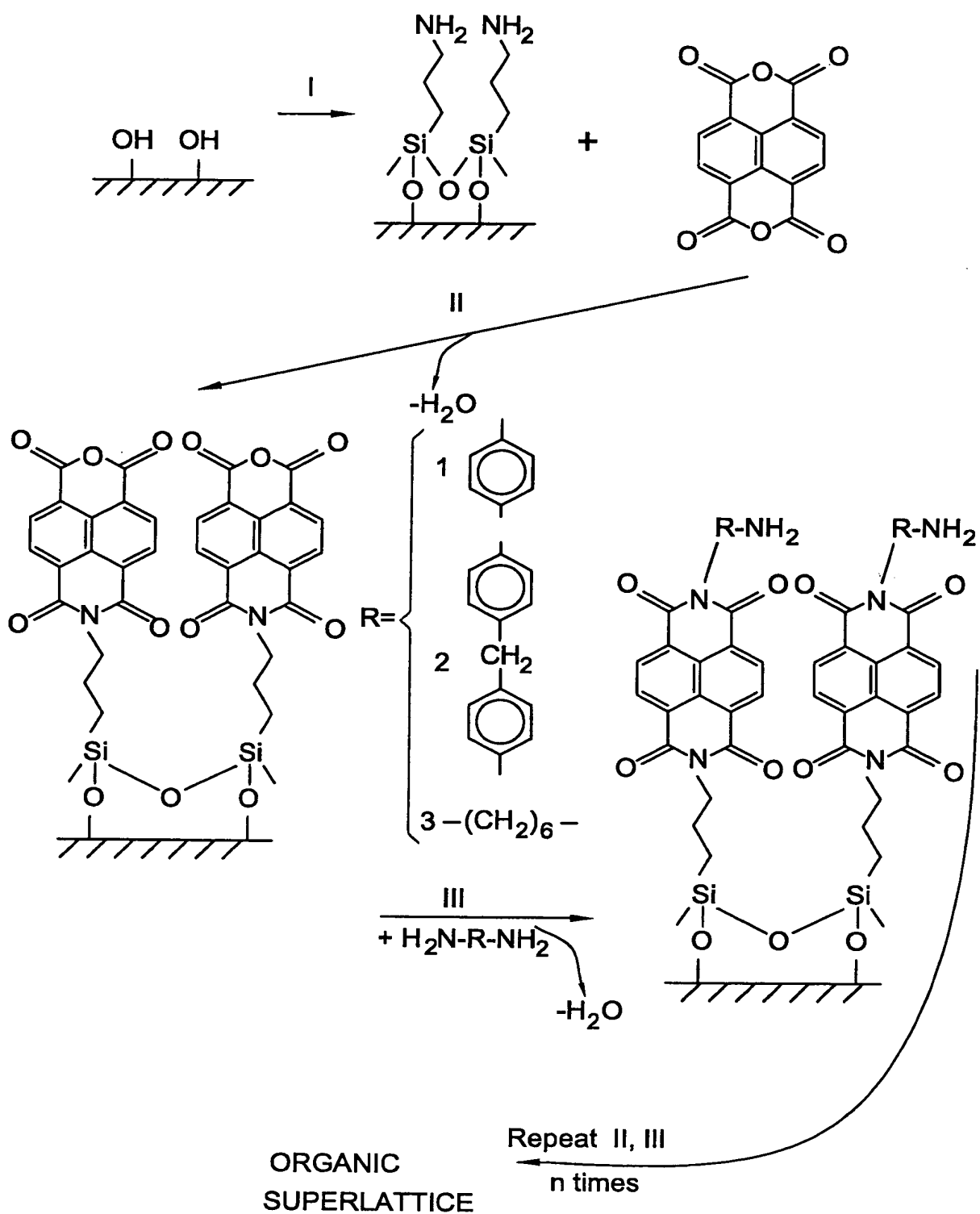


FIG. 6

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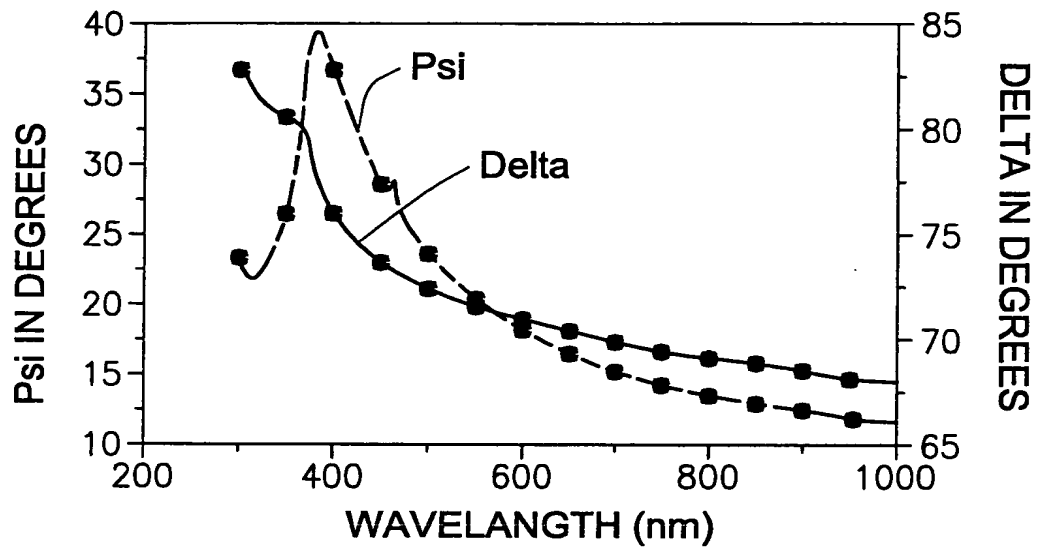


FIG. 7

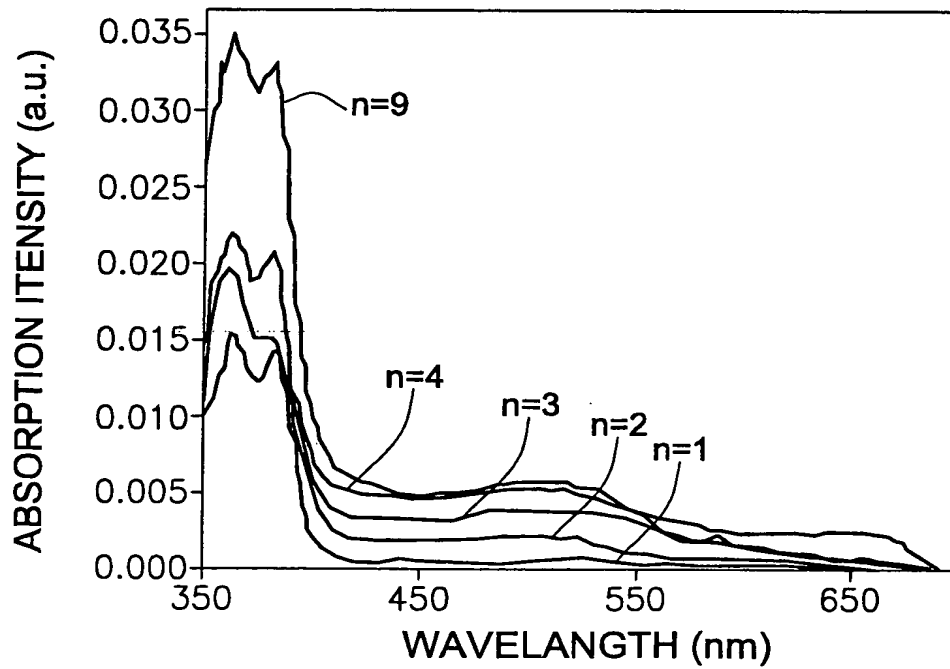


FIG. 8

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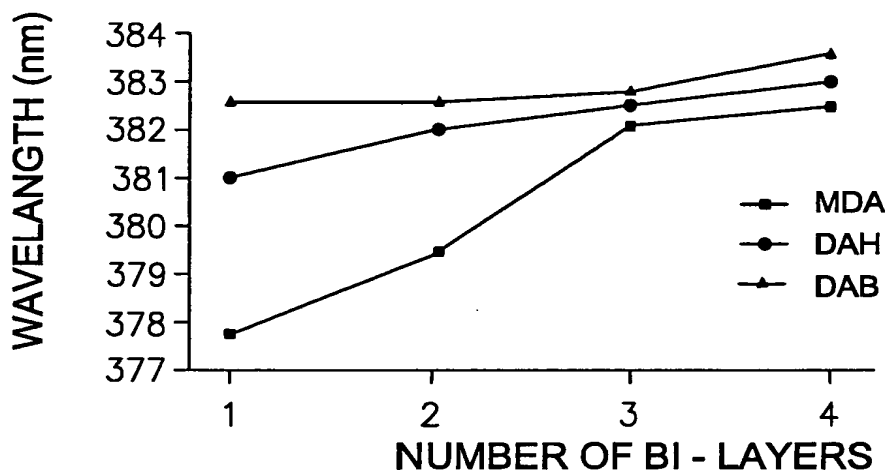


FIG. 9

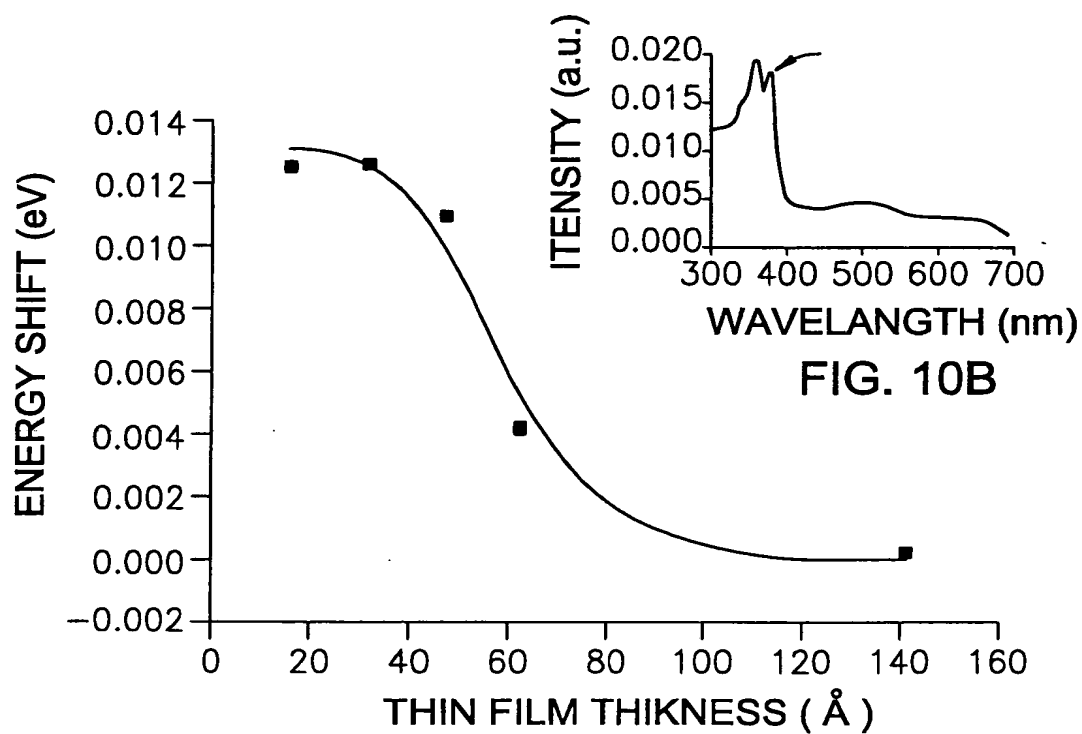


FIG. 10B

FIG. 10A

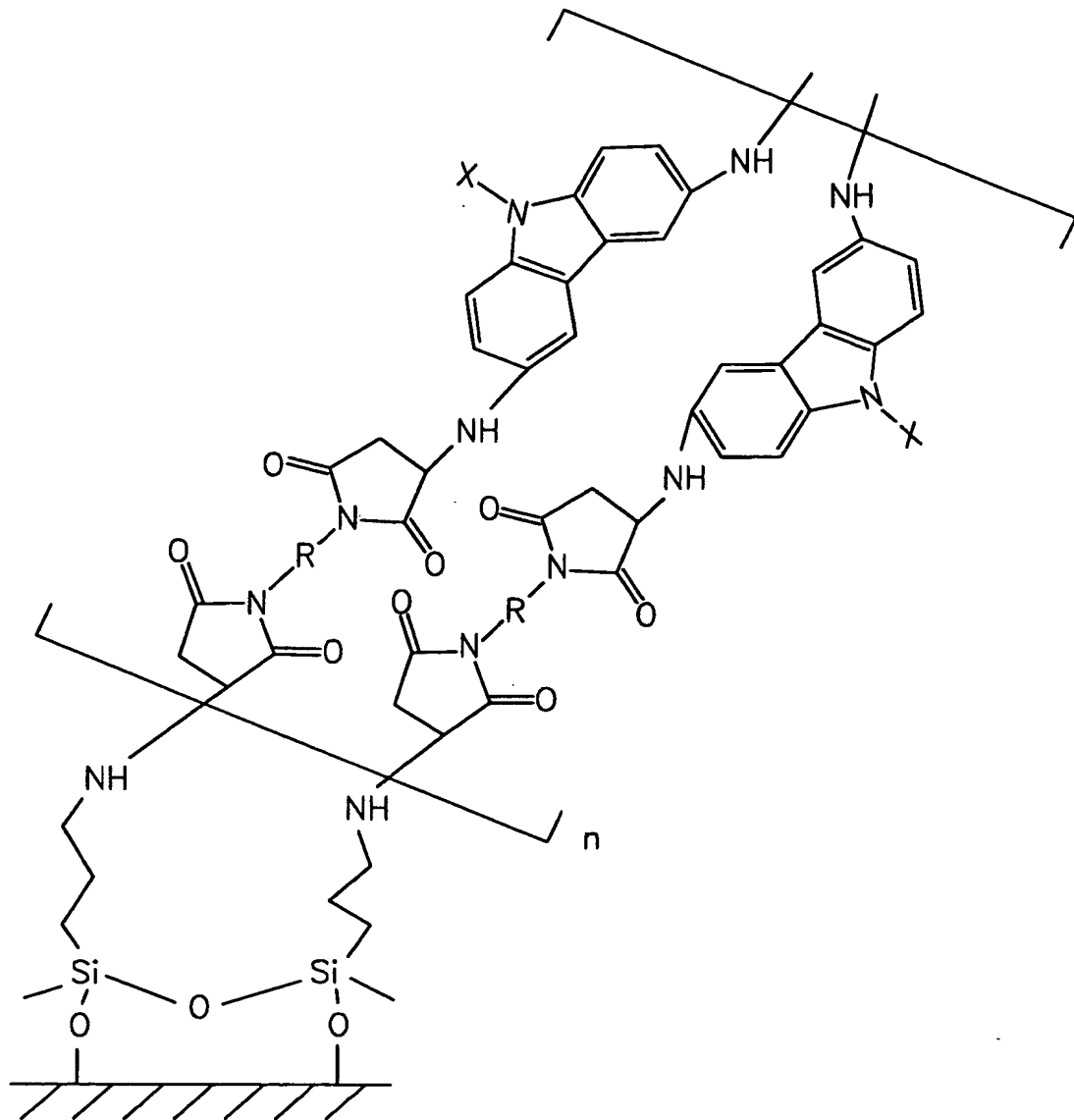


FIG. 11

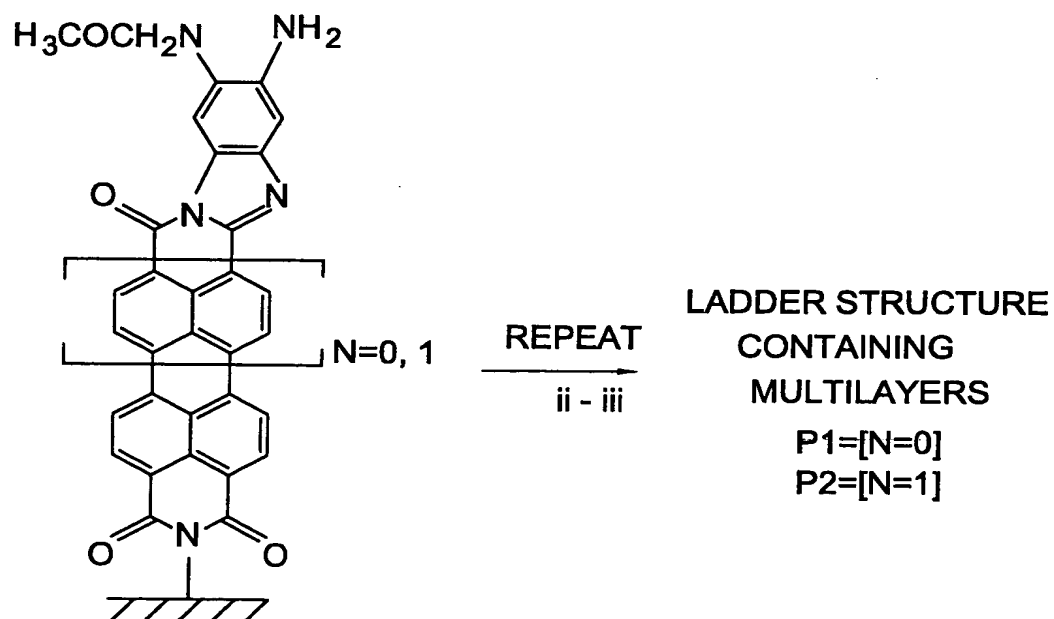
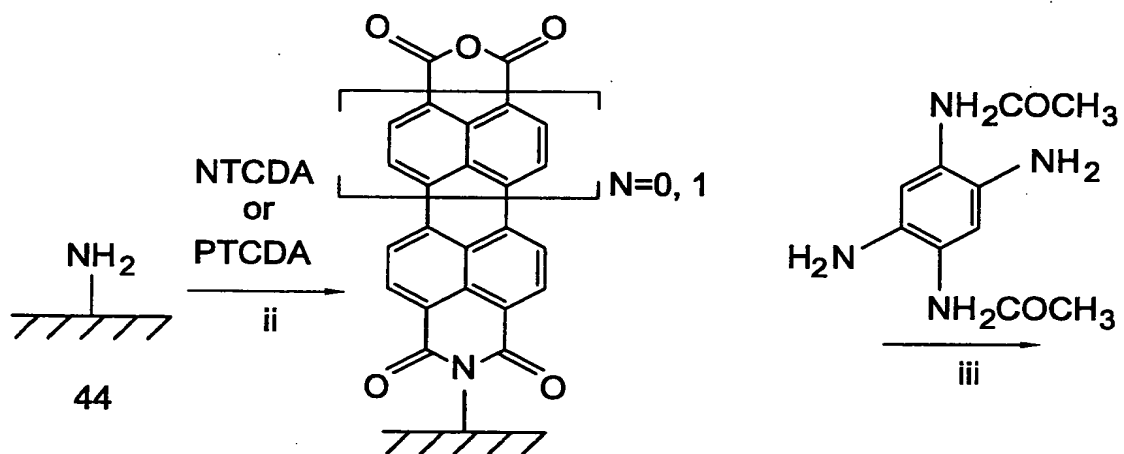


FIG. 12A

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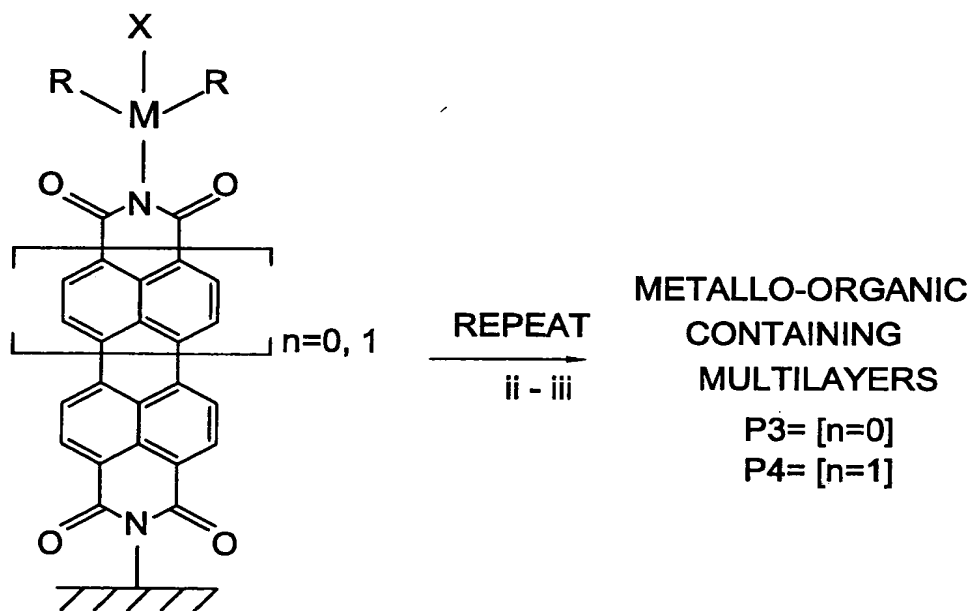
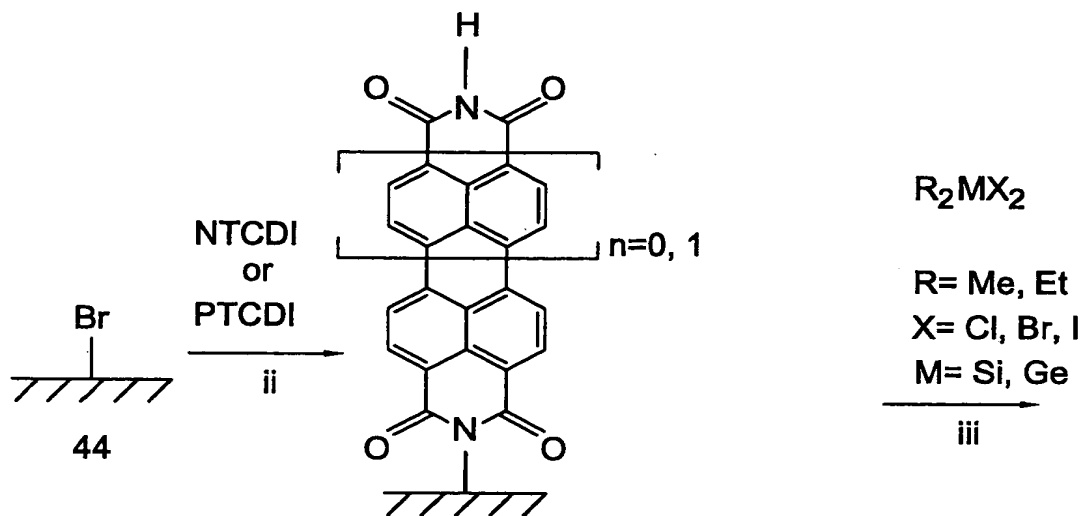


FIG. 12B

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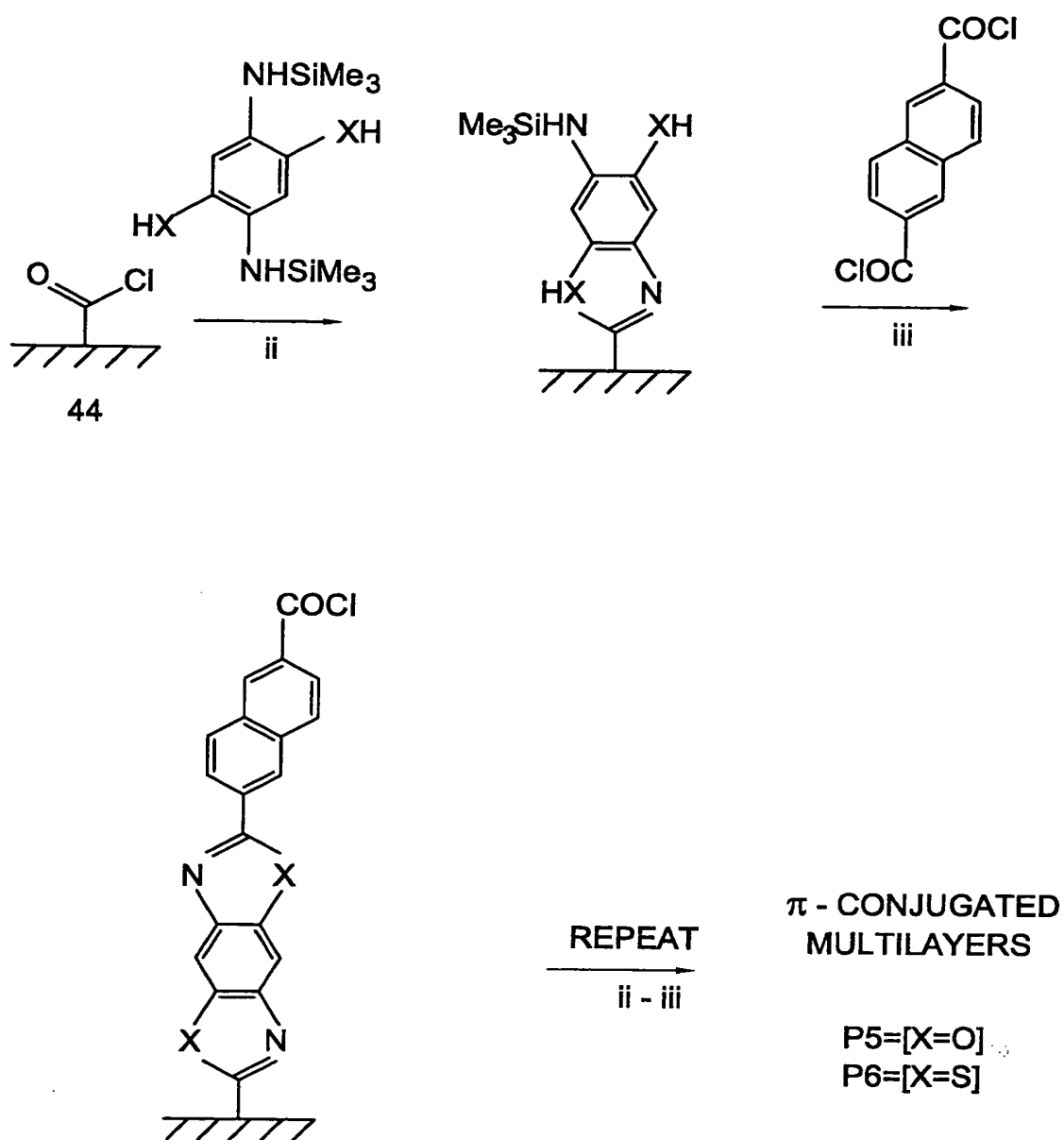


FIG. 12C

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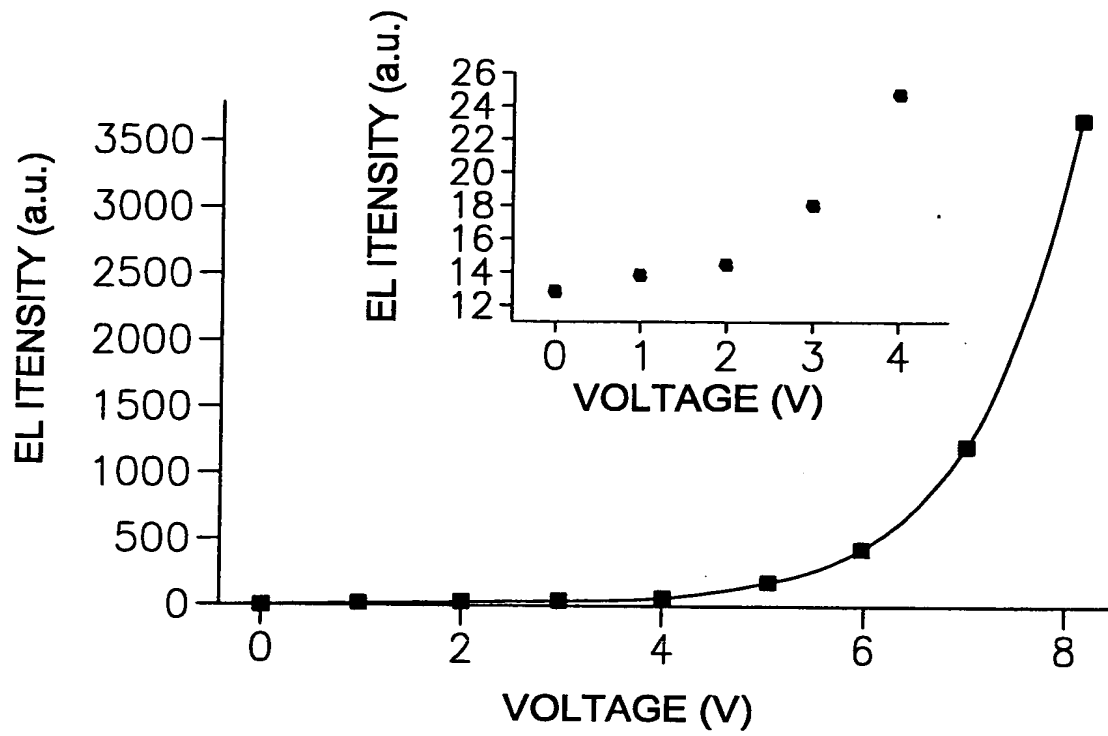


FIG. 13A

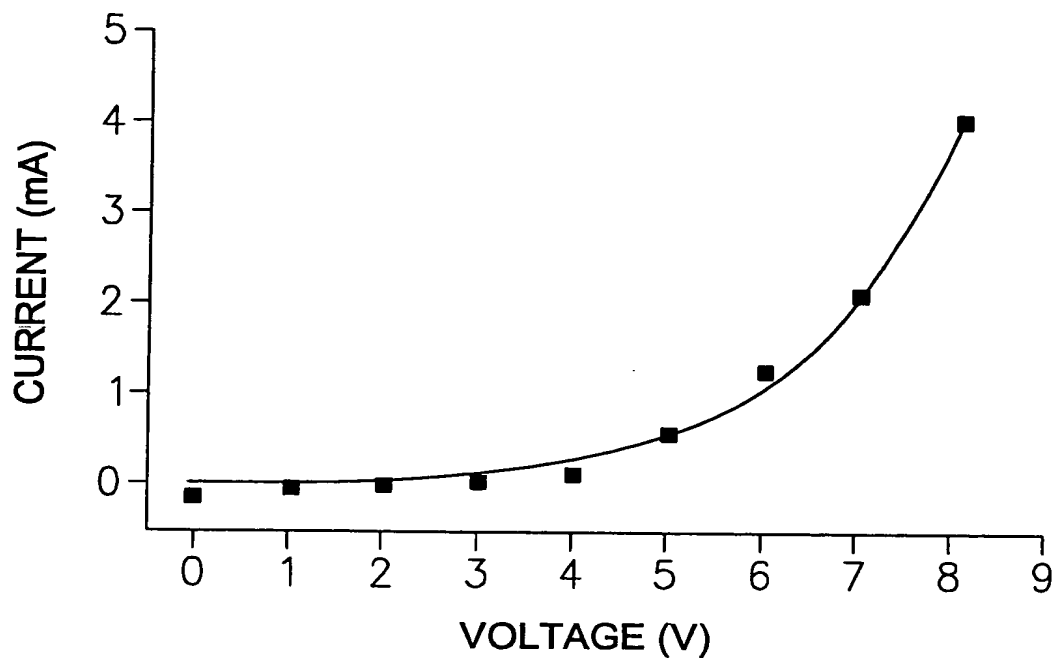


FIG. 13B

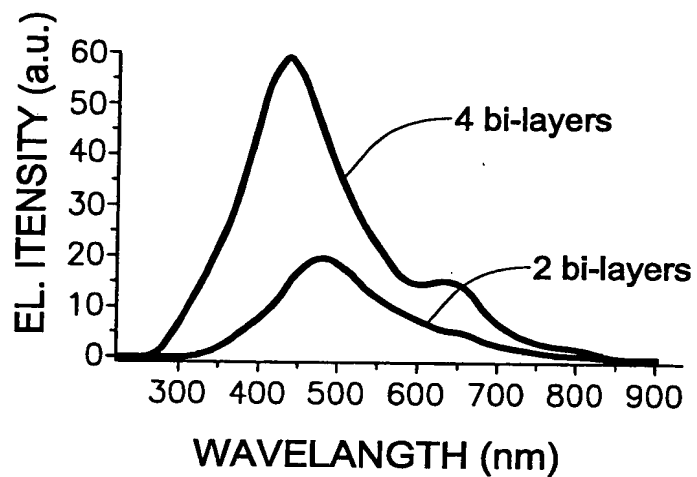


FIG. 14

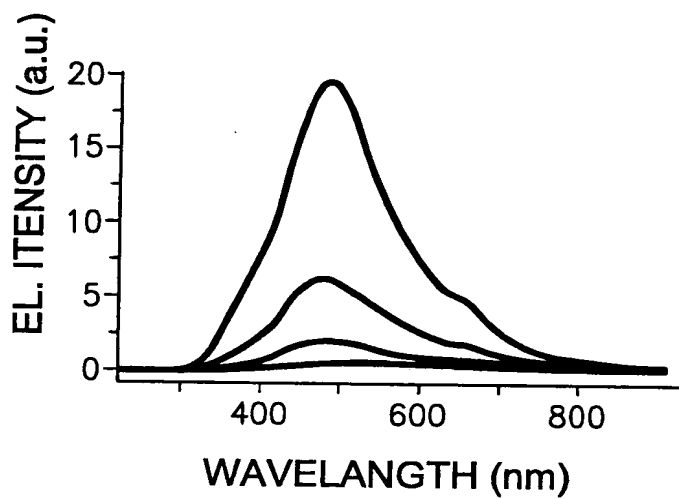


FIG. 15

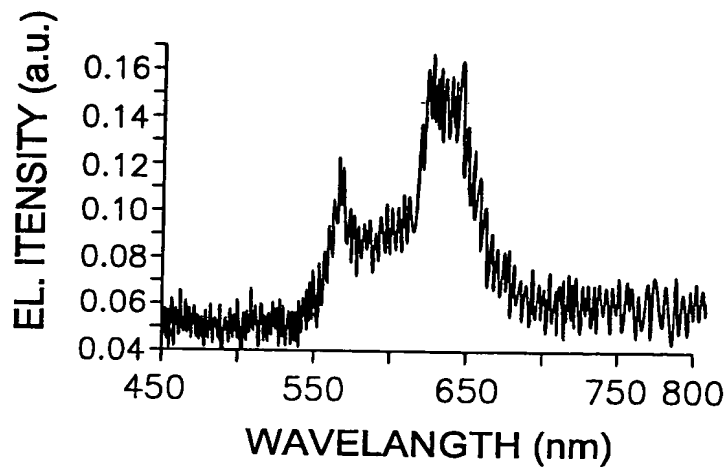


FIG. 16

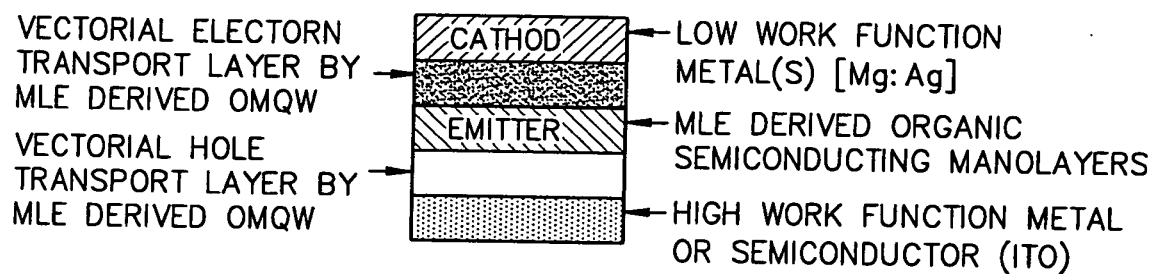


FIG. 17A

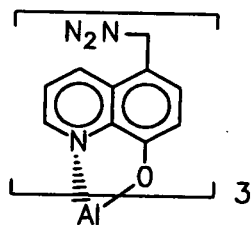


FIG. 17B

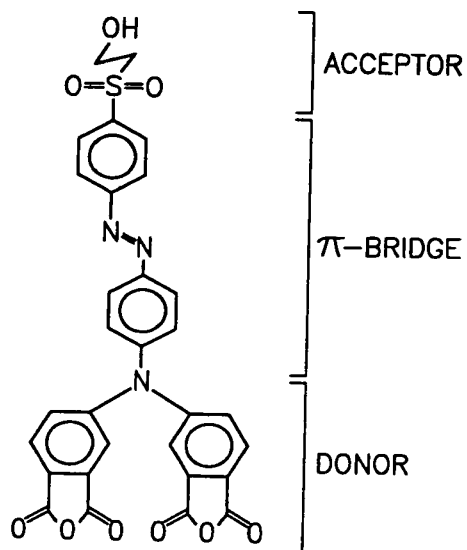


FIG. 18

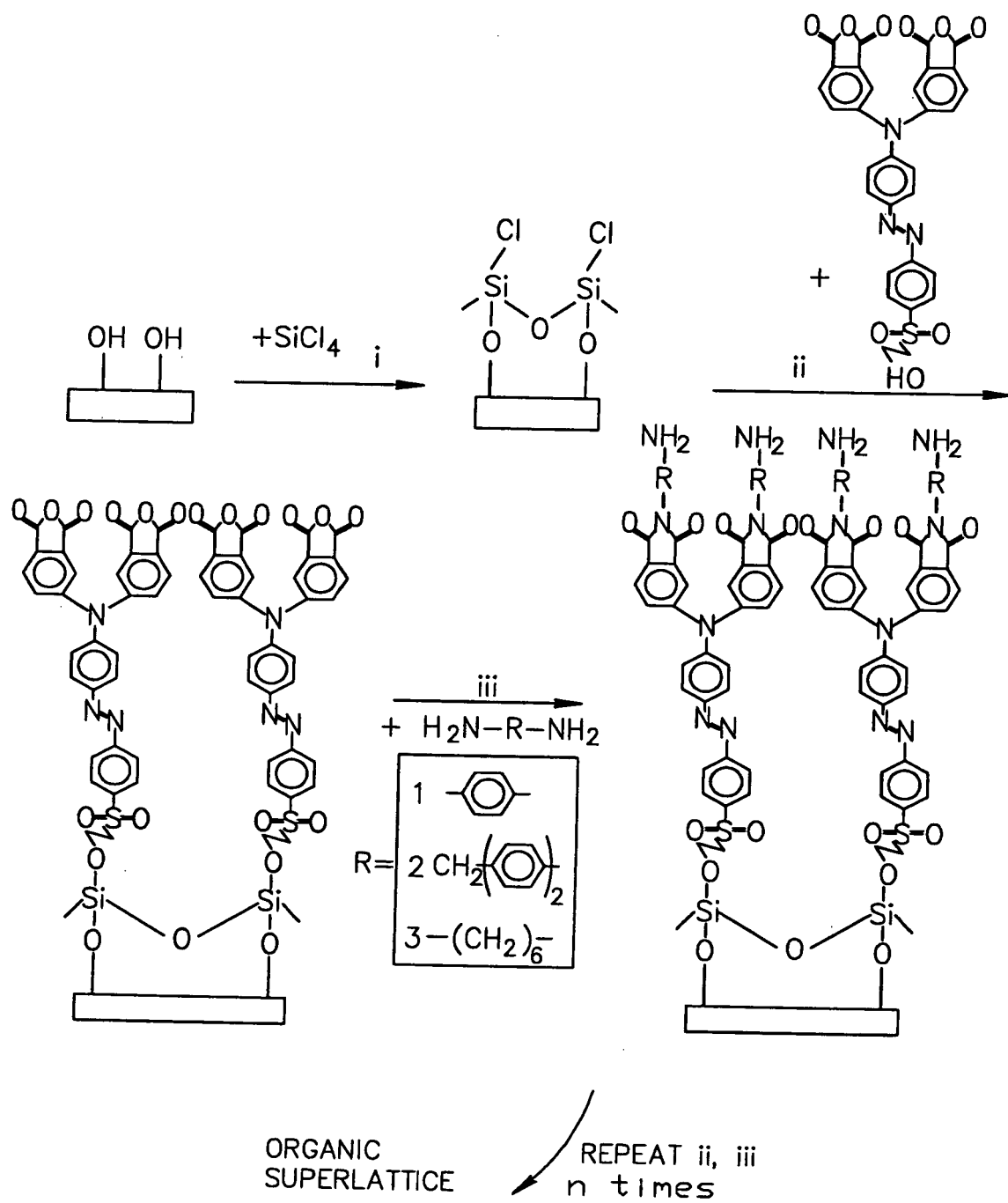


FIG. 19